

January 15, 2013

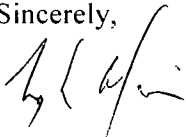
Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
901 North 5th Street
Kansas City, KS 66101

Re: National Mine Tailings Site Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 51 of the Unilateral Administrative Order (Docket No. CERCLA-07-2006-0231) for the referenced project and on behalf of The Doe Run Company and NL Industries, Inc., the progress report for the period December 1, 2012 through December 31, 2012 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0800.

Sincerely,



Ty L. Morris, P.E., R.G.
Vice President

TLM/jms
Enclosure

c: Mark Nations – TDRC
Matt Wohl – TDRC (electronic only)
Kevin Lombardozzi – NL Industries, Inc.
John Kennedy – City of Park Hills
Norm Lucas – Park Hills – Leadington Chamber of Commerce
Kathy Rangen – MDNR
Tim Skoglund – Barr Engineering

07WH

40417191



Superfund

4.2

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National Mine Tailings Site
Park Hills, Missouri
Removal Action - Monthly Progress Report
Period: December 1, 2012 – December 31, 2012

1. Actions Performed and Problems Encountered This Period:

- a. No activities were completed at the site during this period.

2. Analytical Data and Results Received This Period:

- a. During this period, water samples were collected at the sampling locations identified in Appendix C of the Removal Action Work Plan where water was present. Copies of the analytical results from the last sampling event are included with this progress report.
- b. During this period, the Ambient Air Monitoring Report for September 2012 was received. Any issues identified in this report are discussed below. A copy of this document has been sent to your attention.

The September 2012 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No samples were taken with the TSP and PM₁₀ monitors on 09/03/12 due to the holiday.
- No samples were taken with the National #2 (Soccer Field) TSP monitor on 09/21/12 due to mechanical failure. Upon discovery, the issue was corrected.
- No samples were taken with the Big River #4 (Primary) PM₁₀ monitor on 09/21/12 due to mechanical failure. Upon discovery, the issue was corrected.

3. Developments Anticipated and Work Scheduled for Next Period:

- a. Complete work in the Mine Shaft Area.
- b. Begin developing the Removal Action Report.
- c. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- d. Complete air monitoring activities as described in the Removal Action Work Plan.

4. Changes in Personnel:

- a. None.

5. Issues or Problems Arising This Period:

- a. None.

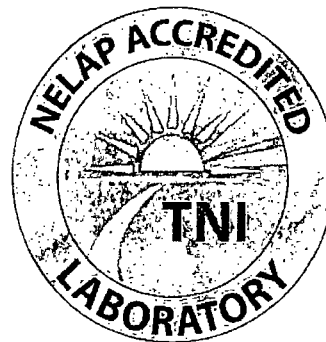
6. Resolution of Issues or Problems Arising This Period:

- a. None.

End of Monthly Progress Report

December 19, 2012

Allison Olds
Barr Engineering Company
1001 Diamond Ridge
Suite 1100
Jefferson City, MO 65109
TEL: (573) 638-5007
FAX: (573) 638-5001



RE: National Tailings Pile - Design and Construction

WorkOrder: 12120697

Dear Allison Olds:

TEKLAB, INC received 1 sample on 12/13/2012 12:05:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

This reporting package includes the following:

| | |
|-------------------------|----------|
| Cover Letter | 1 |
| Report Contents | 2 |
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| Case Narrative | 4 |
| Laboratory Results | 5 |
| Sample Summary | 6 |
| Dates Report | 7 |
| Quality Control Results | 8 |
| Receiving Check List | 14 |
| Chain of Custody | Appended |

Client: Barr Engineering Company**Work Order:** 12120697**Client Project:** National Tailings Pile - Design and Construction**Report Date:** 19-Dec-12**Abbr Definition**

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.

DNI Did not ignite

DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.

ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.

IDPH IL Dept. of Public Health

LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).

LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.

MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).

MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MW Molecular weight

ND Not Detected at the Reporting Limit

NELAP NELAP Accredited

PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).

RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.

RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).

SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.

Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

TNTC Too numerous to count (> 200 CFU)

Qualifiers

- Unknown hydrocarbon

E - Value above quantitation range

M - Manual Integration used to determine area response

R - RPD outside accepted recovery limits

X - Value exceeds Maximum Contaminant Level

B - Analyte detected in associated Method Blank

H - Holding times exceeded

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside recovery limits

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

Cooler Receipt Temp: 3.2 °C

Locations and Accreditations

| Collinsville | | Springfield | | Kansas City | |
|---------------------|---|--------------------|---|--------------------|--------------------------------------|
| Address | 5445 Horseshoe Lake Road Collinsville, IL 62234-7425 | Address | 3920 Pintail Dr Springfield, IL 62711-9415 | Address | 8421 Nieman Road Lenexa, KS 66214 |
| Phone | (618) 344-1004 | Phone | (217) 698-1004 | Phone | (913) 541-1998 |
| Fax | (618) 344-1005 | Fax | (217) 698-1005 | Fax | (913) 541-1998 |
| Email | jhriley@teklabinc.com | Email | KKlostermann@teklabinc.com | Email | dthompson@teklabinc.com |

| State | Dept | Cert # | NELAP | Exp Date | Lab |
|--------------|-------------|-----------------|--------------|-----------------|--------------|
| Illinois | IEPA | 100226 | NELAP | 1/31/2013 | Collinsville |
| Kansas | KDHE | E-10374 | NELAP | 1/31/2013 | Collinsville |
| Louisiana | LDEQ | 166493 | NELAP | 6/30/2013 | Collinsville |
| Louisiana | LDEQ | 166578 | NELAP | 6/30/2013 | Springfield |
| Texas | TCEQ | T104704515-12-1 | NELAP | 7/31/2013 | Collinsville |
| Arkansas | ADEQ | 88-0966 | | 3/14/2013 | Collinsville |
| Illinois | IDPH | 17584 | | 4/30/2013 | Collinsville |
| Kentucky | UST | 0073 | | 5/26/2013 | Collinsville |
| Missouri | MDNR | 00930 | | 4/13/2013 | Collinsville |
| Oklahoma | ODEQ | 9978 | | 8/31/2013 | Collinsville |

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

Lab ID: 12120697-001

Client Sample ID: Nat-East

Matrix: AQUEOUS

Collection Date: 12/12/2012 10:50

| Analyses | Certification | RL | Qual | Result | Units | DF | Date Analyzed | Batch |
|--|---------------|------|------|--------|-------|----|------------------|---------|
| EPA 600 375.2 REV 2.0 1993 (TOTAL) | | | | | | | | |
| Sulfate | NELAP | 200 | S | 231 | mg/L | 20 | 12/18/2012 19:25 | R171785 |
| <i>MS and/or MSD did not recover within control limits due to matrix interference.</i> | | | | | | | | |
| STANDARD METHOD 4500-H B, LABORATORY ANALYZED | | | | | | | | |
| Lab pH | NELAP | 1.00 | | 8.09 | | 1 | 12/14/2012 13:00 | R171621 |
| STANDARD METHODS 2340 C | | | | | | | | |
| Hardness, as (CaCO ₃) | NELAP | 5 | | 510 | mg/L | 1 | 12/14/2012 7:48 | R171594 |
| STANDARD METHODS 2540 C (TOTAL) | | | | | | | | |
| Total Dissolved Solids | NELAP | 20 | | 620 | mg/L | 1 | 12/13/2012 22:15 | R171635 |
| STANDARD METHODS 2540 D | | | | | | | | |
| Total Suspended Solids | NELAP | 6 | | < 6 | mg/L | 1 | 12/14/2012 16:17 | R171644 |
| STANDARD METHODS 2540 F | | | | | | | | |
| Solids, Settleable | NELAP | 0.1 | | < 0.1 | ml/L | 1 | 12/13/2012 17:49 | R171553 |
| STANDARD METHODS 5310 C, ORGANIC CARBON | | | | | | | | |
| Total Organic Carbon (TOC) | NELAP | 1.0 | | < 1.0 | mg/L | 1 | 12/14/2012 14:23 | R171662 |
| EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 12/14/2012 23:13 | 84205 |
| Zinc | NELAP | 10.0 | | 125 | µg/L | 1 | 12/14/2012 23:13 | 84205 |
| EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 12/14/2012 18:55 | 84207 |
| Zinc | NELAP | 10.0 | | 137 | µg/L | 1 | 12/14/2012 18:55 | 84207 |
| STANDARD METHODS 3030 E, 3113 B, METALS BY GFAA | | | | | | | | |
| Lead | NELAP | 2.00 | | 4.63 | µg/L | 1 | 12/14/2012 9:47 | 84203 |
| STANDARD METHODS 3030 B, 3113 B, METALS BY GFAA (DISSOLVED) | | | | | | | | |
| Lead | NELAP | 2.00 | | 4.64 | µg/L | 1 | 12/14/2012 13:04 | 84204 |

Sample Summary

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

| Lab Sample ID | Client Sample ID | Matrix | Fractions | Collection Date |
|---------------|------------------|---------|-----------|------------------|
| 12120697-001 | Nat-East | Aqueous | 5 | 12/12/2012 10:50 |

Dates Report

<http://www.teklabinc.com/>
Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

| Sample ID | Client Sample ID Test Name | Collection Date | Received Date | Prep Date/Time | Analysis Date/Time |
|---------------|--|------------------|------------------|--------------------------------------|---|
| 12120697-001A | Nat-East Standard Methods 2540 F | 12/12/2012 10:50 | 12/13/2012 12:05 | | 12/13/2012 17:49 |
| 12120697-001B | Nat-East EPA 600 375.2 Rev 2.0 1993 (Total) Standard Method 4500-H B, Laboratory Analyzed Standard Methods 2340 C Standard Methods 2540 C (Total) Standard Methods 2540 D | 12/12/2012 10:50 | 12/13/2012 12:05 | | 12/18/2012 19:25 12/14/2012 13:00 12/14/2012 7:48 12/13/2012 22:15 12/14/2012 16:17 |
| 12120697-001C | Nat-East EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA | 12/12/2012 10:50 | 12/13/2012 12:05 | 12/13/2012 15:46 12/13/2012 15:10 | 12/14/2012 18:55 12/14/2012 9:47 |
| 12120697-001D | Nat-East EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 3030 B, 3113 B, Metals by GFAA (Dissolved) | 12/12/2012 10:50 | 12/13/2012 12:05 | 12/13/2012 16:45 12/13/2012 15:05 | 12/14/2012 23:13 12/14/2012 13:04 |
| 12120697-001E | Nat-East Standard Methods 5310 C, Organic Carbon | 12/12/2012 10:50 | 12/13/2012 12:05 | | 12/14/2012 14:23 |

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

EPA 600 375.2 REV 2.0 1993 (TOTAL)

| | | | | | | | | | | |
|---------------|--|----------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Batch R171678 | | SampType: MBLK | | Units mg/L | | | | | | |
| SampID: MBLK | | | | | | | | | | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Sulfate | | 10 | | < 10 | | | | | | 12/14/2012 |

| | | | | | | | | | | |
|---------------|----|---------------|--------|------------|-------------|-------|-----------|------------|------------|------|
| Batch R171678 | | SampType: LCS | | Units mg/L | | | | | | |
| SampID: LCS | | | | | | | | | | Date |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed | |
| Sulfate | 10 | | 22 | 20 | 0 | 108.2 | 90 | 110 | 12/14/2012 | |

| | | | | | | | | | | |
|---------------|----|----------------|--------|------------|-------------|------|-----------|------------|------------|------|
| Batch R171785 | | SampType: MBLK | | Units mg/L | | | | | | |
| SampID: MBLK | | | | | | | | | | Date |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed | |
| Sulfate | 10 | | < 10 | | | | | | 12/18/2012 | |

| | | | | | | | | | | |
|---------------|--|---------------|------|------------|-------|-------------|-------|-----------|------------|---------------|
| Batch R171785 | | SampType: LCS | | Units mg/L | | | | | | |
| SampID: LCS | | | | | | | | | | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Sulfate | | 10 | | 21 | 20 | 0 | 105.4 | 90 | 110 | 12/18/2012 |

| | | | | | | | | | | |
|-------------------------|--|--------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Batch R171785 | | SampType: MS | | Units mg/L | | | | | | |
| SampID: 12120697-001BMS | | | | | | | | | | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Sulfate | | 200 | S | 382 | 200 | 230.8 | 75.8 | 90 | 110 | 12/18/2012 |

| | | | | | | | | | | |
|--------------------------|--|---------------|------|------------|-------|-------------|------|--------------|------|------------|
| Batch R171785 | | SampType: MSD | | Units mg/L | | | | RPD Limit 10 | | |
| SampID: 12120697-001BMSD | | | | | | | | | | Date |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Analyzed |
| Sulfate | | 200 | S | 398 | 200 | 230.8 | 83.4 | 382.4 | 3.88 | 12/18/2012 |

STANDARD METHOD 4500-H B, LABORATORY ANALYZED

| | | | | | | | | | | |
|---------------|--|---------------|------|--------|-------|-------------|------|-----------|------------|---------------|
| Batch R171621 | | SampType: LCS | | Units | | | | | | |
| SampID: LCS | | | | | | | | | | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Lab pH | | 1.00 | | 6.99 | 7.00 | 0 | 99.9 | 99.1 | 100.8 | 12/14/2012 |

| | | | | | | | | | | | |
|--------------------------|--|---------------|------|--------|-------|-------------|------|--------------|------|---------------|--|
| Batch R171621 | | SampType: DUP | | Units | | | | RPD Limit 10 | | | |
| SampID: 12120697-001BDUP | | | | | | | | | | Date Analyzed | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | | |
| Lab pH | | 1.00 | | 8.09 | | | | 8.090 | 0.00 | 12/14/2012 | |

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

STANDARD METHODS 2340 C

| | | | | | | | | | |
|------------------------|----|----------------|--------|------------|-------------|------|-----------|------------|---------------|
| Batch R171594 | | SampType: MBLK | | Units mg/L | | | | | |
| SampID: MB-R171594 | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Hardness, as (CaCO3) | 5 | | < 5 | | | | | | 12/14/2012 |

| | | | | | | | | | |
|------------------------|----|---------------|--------|------------|-------------|-------|-----------|------------|---------------|
| Batch R171594 | | SampType: LCS | | Units mg/L | | | | | |
| SampID: LCS-R171594 | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Hardness, as (CaCO3) | 5 | | 1000 | 1000 | 0 | 100.0 | 90 | 110 | 12/14/2012 |

| | | | | | | | | | | |
|-------------------------|--|--------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Batch R171594 | | SampType: MS | | Units mg/L | | | | | | |
| SampID: 12120697-001BMS | | | | | | | | | | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Hardness, as (CaCO3) | | 5 | | 700 | 200 | 510.0 | 95.0 | 85 | 115 | 12/14/2012 |

| | | | | | | | | | | |
|--------------------------|--|---------------|------|------------|-------|-------------|------|--------------|------|------------|
| Batch R171594 | | SampType: MSD | | Units mg/L | | | | RPD Limit 10 | | |
| SampID: 12120697-001BMSD | | | | | | | | | | Date |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Analyzed |
| Hardness, as (CaCO3) | | 5 | | 700 | 200 | 510.0 | 95.0 | 700.0 | 0.00 | 12/14/2012 |

STANDARD METHODS 2540 C (TOTAL)

| | | | | | | | | | |
|------------------------|----|----------------|--------|------------|-------------|------|-----------|------------|---------------|
| Batch R171635 | | SampType: MBLK | | Units mg/L | | | | | |
| SampID: MBLK | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Total Dissolved Solids | 20 | | < 20 | | | | | | 12/13/2012 |
| Total Dissolved Solids | 20 | | < 20 | | | | | | 12/13/2012 |
| Total Dissolved Solids | 20 | | < 20 | | | | | | 12/13/2012 |

| | | | | | | | | | |
|------------------------|----|---------------|--------|------------|-------------|-------|-----------|------------|---------------|
| Batch R171635 | | SampType: LCS | | Units mg/L | | | | | |
| SampID: LCS | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Total Dissolved Solids | 20 | | 1100 | 1000 | 0 | 109.6 | 90 | 110 | 12/13/2012 |

| | | | | | | | | | |
|------------------------|----|-----------------|--------|------------|-------------|-------|-----------|------------|---------------|
| Batch R171635 | | SampType: LCSQC | | Units mg/L | | | | | |
| SampID: LCSQC | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Total Dissolved Solids | 20 | | 1100 | 1000 | 0 | 109.6 | 90 | 110 | 12/13/2012 |
| Total Dissolved Solids | 20 | | 1100 | 1000 | 0 | 109.8 | 90 | 110 | 12/13/2012 |

| | | | | | | | | | |
|-------------------------|----|--------------|--------|------------|-------------|-------|-----------|------------|---------------|
| Batch R171635 | | SampType: MS | | Units mg/L | | | | | |
| SampID: 12120697-001BMS | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Total Dissolved Solids | 20 | | 1140 | 500 | 620.0 | 104.0 | 85 | 115 | 12/13/2012 |

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

STANDARD METHODS 2540 C (TOTAL)

| Batch R171635 | | SampType: MSD | | Units mg/L | | RPD Limit 15 | | | | Date |
|------------------------|--|---------------|------|------------|-------|--------------|-------|-------------|------|------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Analyzed |
| Total Dissolved Solids | | 20 | | 1150 | 500 | 620.0 | 106.0 | 1140 | 0.87 | 12/13/2012 |

STANDARD METHODS 2540 D

| Batch R171644 | | SampType: MBLK | | Units mg/L | | | | | | Date |
|------------------------|--|----------------|------|------------|-------|-------------|------|-----------|------------|------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed |
| Total Suspended Solids | | 6 | | < 6 | | | | | | 12/14/2012 |

| Batch R171644 | | SampType: LCS | | Units mg/L | | | | | | Date |
|------------------------|--|---------------|------|------------|-------|-------------|-------|-----------|------------|------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed |
| Total Suspended Solids | | 6 | | 93 | 100 | 0 | 93.0 | 85 | 115 | 12/14/2012 |
| Total Suspended Solids | | 6 | | 104 | 100 | 0 | 104.0 | 85 | 115 | 12/14/2012 |
| Total Suspended Solids | | 6 | | 100 | 100 | 0 | 100.0 | 85 | 115 | 12/14/2012 |

| Batch R171644 | | SampType: DUP | | Units mg/L | | RPD Limit 15 | | | | Date |
|------------------------|--|---------------|------|------------|-------|--------------|------|-------------|------|------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Analyzed |
| Total Suspended Solids | | 6 | | < 6 | | | | 0 | 0.00 | 12/14/2012 |

STANDARD METHODS 5310 C, ORGANIC CARBON

| Batch R171662 | | SampType: MBLK | | Units mg/L | | | | | | Date |
|----------------------------|--|----------------|------|------------|-------|-------------|------|-----------|------------|------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed |
| Total Organic Carbon (TOC) | | 1.0 | | < 1.0 | | | | | | 12/14/2012 |

| Batch R171662 | | SampType: LCS | | Units mg/L | | | | | | Date |
|----------------------------|--|---------------|------|------------|-------|-------------|-------|-----------|------------|------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed |
| Total Organic Carbon (TOC) | | 10.0 | | 63.2 | 59.7 | 0 | 105.8 | 90 | 110 | 12/14/2012 |

| Batch R171662 | | SampType: MS | | Units mg/L | | | | | | Date |
|----------------------------|--|--------------|------|------------|-------|-------------|------|-----------|------------|------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed |
| Total Organic Carbon (TOC) | | 1.0 | | 5.6 | 5.0 | 0.9500 | 92.6 | 85 | 115 | 12/14/2012 |

| Batch R171662 | | SampType: MSD | | Units mg/L | | RPD Limit 10 | | | | Date |
|----------------------------|--|---------------|------|------------|-------|--------------|------|-------------|------|------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Analyzed |
| Total Organic Carbon (TOC) | | 1.0 | | 5.6 | 5.0 | 0.9500 | 92.4 | 5.580 | 0.18 | 12/14/2012 |

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)

| Batch 84205 | | SampType: MBLK | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|----------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | < 2.00 | 2.00 | 0 | 0 | -100 | 100 | 12/14/2012 |
| Zinc | | 10.0 | | < 10.0 | 10.0 | 0 | 0 | -100 | 100 | 12/14/2012 |

| Batch 84205 | | SampType: LCS | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|---------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | 45.7 | 50.0 | 0 | 91.4 | 85 | 115 | 12/14/2012 |
| Zinc | | 10.0 | | 478 | 500 | 0 | 95.7 | 85 | 115 | 12/14/2012 |

| Batch 84205 | | SampType: MS | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|--------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | 42.0 | 50.0 | 0 | 84.0 | 75 | 125 | 12/14/2012 |
| Zinc | | 10.0 | | 566 | 500 | 125.1 | 88.1 | 75 | 125 | 12/14/2012 |

| Batch 84205 | | SampType: MSD | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|---------------|------|------------|-------|-------------|------|-------------|------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | |
| Cadmium | | 2.00 | | 41.9 | 50.0 | 0 | 83.8 | 42 | 0.24 | 12/14/2012 |
| Zinc | | 10.0 | | 567 | 500 | 125.1 | 88.3 | 565.7 | 0.18 | 12/14/2012 |

EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)

| Batch 84207 | | SampType: MBLK | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|----------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | < 2.00 | 2.00 | 0 | 0 | -100 | 100 | 12/14/2012 |
| Zinc | | 10.0 | | < 10.0 | 10.0 | 0 | 0 | -100 | 100 | 12/14/2012 |

| Batch 84207 | | SampType: LCS | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|---------------|------|------------|-------|-------------|-------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | 48.9 | 50.0 | 0 | 97.8 | 85 | 115 | 12/14/2012 |
| Zinc | | 10.0 | | 515 | 500 | 0 | 103.0 | 85 | 115 | 12/14/2012 |

| Batch 84207 | | SampType: MS | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|--------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | 46.3 | 50.0 | 0 | 92.6 | 75 | 125 | 12/14/2012 |
| Zinc | | 10.0 | | 621 | 500 | 136.8 | 96.9 | 75 | 125 | 12/14/2012 |

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)

| Batch 84207 | | SampType: MSD | | Units µg/L | | RPD Limit 20 | | | | Date Analyzed |
|--------------------------|--|---------------|------|------------|--------|--------------|-------------|------|-------------|---------------|
| SampID: 12120697-001CMSD | | Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD |
| | | Cadmium | 2.00 | | 46.2 | 50.0 | 0 | 92.4 | 46.3 | 0.22 |
| | | Zinc | 10.0 | | 619 | 500 | 136.8 | 96.5 | 621.3 | 0.34 |

STANDARD METHODS 3030 E, 3113 B, METALS BY GFAA

| Batch 84203 | | SampType: MBLK | | Units µg/L | | | | | | Date Analyzed |
|------------------|--|----------------|------|------------|--------|-------|-------------|------|-----------|---------------|
| SampID: MB-84203 | | Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit |
| | | Lead | 2.00 | | < 2.00 | 2.00 | 0 | 0 | -100 | 100 |

| Batch 84203 | | SampType: LCS | | Units µg/L | | | | | | Date Analyzed |
|-------------------|--|---------------|------|------------|--------|-------|-------------|------|-----------|---------------|
| SampID: LCS-84203 | | Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit |
| | | Lead | 2.00 | | 14.4 | 15.0 | 0 | 96.2 | 85 | 115 |

| Batch 84203 | | SampType: MS | | Units µg/L | | | | | | Date Analyzed |
|-------------------------|--|--------------|------|------------|--------|-------|-------------|------|-----------|---------------|
| SampID: 12120697-001CMS | | Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit |
| | | Lead | 2.00 | | 18.6 | 15.0 | 4.6325 | 93.3 | 70 | 130 |

| Batch 84203 | | SampType: MSD | | Units µg/L | | RPD Limit 20 | | | | Date Analyzed |
|--------------------------|--|---------------|------|------------|--------|--------------|-------------|------|-------------|---------------|
| SampID: 12120697-001CMSD | | Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD |
| | | Lead | 2.00 | | 18.9 | 15.0 | 4.6325 | 95.1 | 18.6274 | 1.43 |

STANDARD METHODS 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)

| Batch 84204 | | SampType: MBLK | | Units µg/L | | | | | | Date Analyzed |
|------------------|--|----------------|------|------------|--------|-------|-------------|------|-----------|---------------|
| SampID: MB-84204 | | Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit |
| | | Lead | 2.00 | | < 2.00 | 2.00 | 0 | 0 | -100 | 100 |

| Batch 84204 | | SampType: LCS | | Units µg/L | | | | | | Date Analyzed |
|-------------------|--|---------------|------|------------|--------|-------|-------------|------|-----------|---------------|
| SampID: LCS-84204 | | Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit |
| | | Lead | 2.00 | | 14.3 | 15.0 | 0 | 95.5 | 85 | 115 |

| Batch 84204 | | SampType: MS | | Units µg/L | | | | | | Date Analyzed |
|-------------------------|--|--------------|------|------------|--------|-------|-------------|------|-----------|---------------|
| SampID: 12120697-001DMS | | Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit |
| | | Lead | 2.00 | | 18.2 | 15.0 | 4.6357 | 90.5 | 70 | 130 |

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

STANDARD METHODS 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)

| Batch 84204 | | SampType: MSD | | Units µg/L | | RPD Limit 20 | | | | Date Analyzed |
|-------------|--|---------------|------|------------|-------|--------------|------|-------------|------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | |
| Lead | | 2.00 | | 17.8 | 15.0 | 4.6357 | 87.9 | 18.2171 | 2.22 | 12/14/2012 |

Receiving Check List

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12120697

Client Project: National Tailings Pile - Design and Construction

Report Date: 19-Dec-12

Carrier: Neil Talbot

Received By: SRH

Completed by:

On:

13-Dec-12

Emily E. Pohlman

Reviewed by:

On:

13-Dec-12

Michael L. Austin

Pages to follow: Chain of custody

Extra pages included

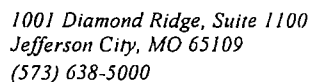
| | | | | |
|---|---|---|--------------------------------------|----------------------------------|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> | Temp °C 3.2 |
| Type of thermal preservation? | None <input type="checkbox"/> | Ice <input checked="" type="checkbox"/> | Blue Ice <input type="checkbox"/> | Dry Ice <input type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Reported field parameters measured: | Field <input type="checkbox"/> | Lab <input checked="" type="checkbox"/> | NA <input type="checkbox"/> | |
| Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

| | | | |
|---|---|-----------------------------|---|
| Water - at least one vial per sample has zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials <input checked="" type="checkbox"/> |
| Water - TOX containers have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No TOX containers <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| NPDES/CWA TCN interferences checked/treated in the field? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

Any No responses must be detailed below or on the COC.

Custody seal(s) intact on shipping container/cooler. NT 12/13/12.



NAT 121212

Preservatives: 2 HNO₃, 1 H₂SO₄, 2
Unpreserved

3.2°C, ice Custody seal intact preservative ✓ EEP 12/13/10

Time: 12:05

Distribution: White – Original Accompanies Shipment to Lab; Yellow – Field Copy; Pink – Lab Coordinator